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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/705,187	11/02/2000	Enoch Kim	11641/6	4852

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EXAMINER

PENG, KUO LIANG

ART UNIT	PAPER NUMBER
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1712

DATE MAILED: 04/01/2002

9

Please find below and/or attached an Office communication concerning this application or proceeding.

10-9

<b>Office Action Summary</b>	Application No. 09/705,187	Applicant(s) KIM, ENOCH	
	Examiner Kuo-Liang Peng	Art Unit 1712	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 2/27/02 *Response to restriction*.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-52 is/are pending in the application.
- 4a) Of the above claim(s) 16-52 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☒ Claim(s) 9 and 14 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All   b) ☐ Some \* c) ☐ None of:  
     1. ☐ Certified copies of the priority documents have been received.  
     2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
     3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
     \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input checked="" type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                 | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>5, 8</u> . | 6) <input type="checkbox"/> Other: _____                                    |

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### DETAILED ACTION

1. The Applicants' response to restriction requirement filed on February 27, 2002 was received. Claims 1-15 are elected.
2. Examiner would like to draw Applicant's attention that Examiner Kuo-Liang Peng is in Art Unit 1712 rather than Art Unit 1714.
3. Applicant should notice that the Supplemental Information Disclosure Statement form filed on February 27, 2002 is not an updated one.

§ 1.97(e)(1) - Statement for Filing IDS under §§ 1.97(c) and (d)

*• Amended to require statement that the **first** citation of the item by a foreign patent office in a counterpart foreign application was not made, in **any** communication from the foreign office, more than three months prior to the IDS filing*

4. Applicant's election of the invention of Group I in Paper No. 7 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

The requirement is still deemed proper and is therefore made FINAL.

Groups II-V, Claims 16-52 are withdrawn for further consideration.

### *Specification*

5. The disclosure is objected to because of the following informalities:

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In line 8 of page 3, line 21 of page 13 and line 22 of page 14, Applicant should update the co-pending U.S. Patent Applications.

Appropriate correction is required.

### *Claim Objections*

6. Claims 9 and 14 are objected to because of the following informalities:

In line 4 of Claim 9, after "5", should there be -- mole --?

In line 4 of Claim 14, it is not clear as to what "PEG-methacrylates" refers to. Should it be "polyethylene glycol methacrylates" as indicated in the specification (page 9, line 21)?

Appropriate correction is required.

### *Claim Rejections - 35 USC § 112*

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 1-9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1-2 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite in that it fails to point out what is included or excluded by the claim language. These claims are omnibus type claims.

Claim 3 recites the limitation "polymer gel contact mask" in line 1. There is insufficient antecedent basis for this limitation in the claim.

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In line 1 of Claim 5, “substantially” renders the claim indefinite.

9. The following Office Action is based on that Claim 3 depends on Claim 2.

*Claim Rejections - 35 USC § 102*

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

11. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Xia (“Soft Lithography”, Angew. Chem., Int. Ed., 1998, 37, 550-575).

Xia discloses a polymer gel made of PMDS as a polymer gel patterning element (page 556, right column and page 558, left column). The use of Applicant’s polymer gel patterning element for patterning biological materials is merely an intended use, which does not carry any weight of patentability. See MPEP 2111.02.

12. Claims 1-4, 10-11 and 14-15 are rejected under 35 U.S.C. 102(b) as being anticipated by Reeves (US 5,961,479).

With respect to Claim 1, Reeves discloses a hydrogel therapeutic mask having plurality of open surfaces of a predetermined size and spatially positioned (col. 1, line 64 to col. 2, line

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13). The use of Applicant's polymer gel patterning element for patterning biological materials is merely an intended use which does not carry any weight of patentability. See MPEP 2111.02.

With respect to Claims 2-3, Reeves discloses a hydrogel therapeutic mask (i.e., reads on a polymer gel contact mask) having plurality of open surfaces of a predetermined size and spatially positioned (col. 1, line 64 to col. 2, line 13).

With respect to Claim 4, the hydrogel can be made by polyacrylamide, poly-2-hydroxyethylmethacrylate(i.e., polyHEMA), etc. (col. 2, lines 52- 67).

With respect to Claims 10-11, as mentioned previously, Reeves discloses a hydrogel therapeutic mask (i.e., reads on a polymer gel contact mask) having plurality of open surfaces of a predetermined size and spatially positioned (col. 1, line 64 to col. 2, line 13).

With respect to Claim 14, the hydrogel can be made by polyacrylamide, poly-2-hydroxyethylmethacrylate(i.e., polyHEMA which is a polymethacrylate), etc. (col. 2, lines 52-67).

With respect to Claim 15, as mentioned previously, Reeves discloses a hydrogel therapeutic mask (i.e., reads on a polymer gel contact mask). It is noted that Claim 15 is a product-by-process claim. "Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process" In re Thorpe, 777 F. 2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985). Since Reeves' hydrogel therapeutic mask is substantially

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similar to that of the Applicants polymer gel contact mask, Reeves's disclosure obviously reads on the limitation of the present claimed invention.

13. Claims 1-2 and 10-15 are rejected under 35 U.S.C. 102(b) as being anticipated by Bruin (US 5,965,237).

With respect to Claim 1, Bruin discloses a polymer gel microstructured device (i.e., reads on Applicants polymer gel patterning element). The use of Applicant's polymer gel patterning element for patterning biological materials is merely an intended use that does not carry any weight of patentability. See MPEP 2111.02.

With respect to Claim 2, Bruin discloses a polymer gel microstructured device (i.e., reads on Applicant's polymer gel contact mask).

With respect to Claims 10-12, Bruin discloses a polymer gel microstructured device (i.e., reads on Applicant's contact mask) which has 4 holes of about 3 mm in diameter (col. 4, line 50 to col. 5, line 9).

With respect to Claim 14, Bruin further teaches that the polymer gel microstructured device can be made of polydimethylsiloxane (col. 4, line 50 to col. 5, line 9).

With respect to Claim 13, Bruin further teaches that the polymer gel microstructured device (i.e., the PDMS layer 5 (col. 4, line 56)) have a thickness of about 10  $\mu\text{m}$  to about 90  $\mu\text{m}$  (col. 4, line 16) because it bears a negative replica 7 of relief 4 (col. 4, line 57).

With respect to Claim 15, as mentioned previously, Bruin discloses a polymer gel microstructured device (i.e., reads on Applicants polymer gel patterning element). It is noted that Claim 15 is a product-by-process claim. "Even though product-by-process claims are

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limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process” In re Thorpe, 777 F. 2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985). Since Bruin’s polymer gel microstructured device is substantially similar to that of the Applicants polymer gel contact mask, Bruin’s disclosure obviously reads on the limitation of the present claimed invention.

### ***Claim Rejections - 35 USC § 103***

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

15. Claims 5-6 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Reeves in view of Wichterle (US 3,220,960).

Reeves discloses a hydrogel therapeutic mask as described in paragraph 10, which is incorporated herein by reference.

With respect to Claim 5-6, the difference between Reeves and the present invention is the requirement of the use of a crosslinking agent that can be diacrylate or polyacrylate.

Reeves teaches the desire of the use of a hydrogel therapeutic mask which is self-sustaining (i.e., strong in physical properties) (col. 1, lines 52-55). Furthermore, it is well known



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that polyHEMA is usually obtained by polymerizing HEMA with a crosslinking agent. For example, Wichterle discloses a hydrogel obtained by polymerizing of a mixture comprising ethylene glycol monomethacrylate (i.e., HEMA) and ethylene glycol dimethacrylate as a crosslinking agent (Example V). The amount of the crosslinking agent can be 1 % (col. 2, lines 17-19)(i.e., 0.6 mole % (MW of HEMA is 130 and MW of ethylene glycol dimethacrylate is 198) which reads on about 1 mole %). The motivation of using the crosslinking agent is to impart the elasticity to the resulting hydrogel (Example V). In light of the benefit mentioned, it would have been obvious to one of ordinary skill in the art at the time of invention to utilize the ethylene glycol dimethacrylate as a crosslinking agent in Reeves composition with expected success, and thereby obtained the present invention.

With respect to Claim 9, Wichterle further teaches the use of the crosslinking agent in an amount of 1 % (col. 2, lines 17-19)(i.e., 0.6 mole % which reads on about 1 mole %)(Note: molecular weight of HEMA is 130 and that of ethylene glycol dimethacrylate is 198).

16. Claims 7 and 8 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

None of the aforementioned references teaches or suggest the use of a HEMA copolymer.

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kuo-Liang Peng whose telephone number is (703) 306-5550.

The examiner can normally be reached on Monday-Friday from 8:30 AM to 5:00 PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Dawson, can be reached on (703) 308-2340. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9310.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Kuo-Liang Peng

March 27, 2002

A handwritten signature in black ink, reading "Robert A. Dawson". The signature is fluid and cursive, with the first name "Robert" and last name "Dawson" clearly legible.

Robert Dawson  
Supervisory Patent Examiner  
Technology Center 1700